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ABSTRACT

This research explored the feasibility of machine-teaching limited foreign language skills to combat soldiers, specifically, enough of a language to enable them to obtain tactical information from newly captured prisoners of war. The course material used in the pilot study (Russian) was limited to tactical subject matter, presented by means of dual-track tape recorders, and arranged to build and sustain motivation and maximize learning efficiency without use of human instructors. The results of this study, as measured by both academic and job-simulated tests, support the feasibility of machine-teaching limited foreign language skills. The methodology developed is considered to have further possible application in foreign language teaching. (Author/RM)

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Research Report

January 1962

Development and Evaluation of Training Methods for the Rapid Acquisition of Language Skills

by

Eugene H. Rocklyn, Richard I. Moren,
and Andris Zinovieff

U S DEPARTMENT OF HEALTH
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The George Washington University
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DEVELOPMENT AND EVALUATION OF TRAINING METHODS FOR THE RAPID ACQUISITION OF LANGUAGE SKILLS—Eugene H. Rocklyn, Richard I. Moren, and Andre Zinovieff (Training Methods Division)

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Task CONTACT I

Dr. William A. McClelland was Director of Research for the Training Methods Division during the initial phases of the Task CONTACT research.

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BRIEF

PROBLEM

There is need for a limited language course to be used as a basis for teaching combat soldiers enough about an enemy language to enable them to obtain tactical information from newly captured prisoners of war. The course should contain all the material necessary to meet the immediate tactical needs of combat interrogation; however, practical considerations in teaching such a course to large numbers of combat soldiers make succinctness of material highly desirable. Other practical considerations make it necessary to develop some sort of substitute for human instructors.

The research described in this report explored the feasibility of such a course and of the training approach and methods devised for its administration. The language chosen for the pilot study was Russian.

METHOD

For this study, the content for a limited language course was selected primarily from relevant military manuals. The course was first drafted in English. The material to be taught consisted of the following:

(1) Sixteen commands, such as "Surrender," "Hands up," "Speak slowly," and "Repeat answer."

(2) Ten frames for questions, such as "Have you there____," "How many____," "What kind____," and "Where___."

(3) One hundred words or phrases, such as "tanks," "troops," and "guns," which could be inserted into most of the question frames to make meaningful questions.

(4) One hundred basic answers, using words that might be spoken by a prisoner answering these tactical questions; these included such general words as "yes" and "no," the cardinal and ordinal numbers, the compass headings, the time divisions, and so forth, plus the necessary connectives. Answers were formulated so that the words used could be interchanged to make up other probable answers.

The English course content was translated into Russian and then, by an independent linguist, back into English as a translation check.

The course was administered by using dual-track tape recorders as teaching machines, in place of human instructors. The course content was sequenced and arranged in a manner calculated to maximize learning efficiency, minimize learning time, and maintain motivation. The procedures employed to achieve these ends were based on a review of previous research and on classroom observations.

The Russian-English content was recorded on master tapes which were then duplicated and inserted into cartridges for use by individual students. A procedure for scoring every student response was developed, and complete instructions were written to guide a student taking the course without direct supervision by an instructor.

BRIEF

The course was first given on a trial basis to five Army enlisted men who had just finished their basic training. Their progress in learning was analyzed to determine where changes were needed in content and study methods, and the course was revised accordingly. The second administration was carried out by another group of five soldiers without interference by or interaction with the experimenters.

RESULTS

The time taken to complete the course by the five students in the second administration ranged from 22.5 to 24 days.

Scores on tests of the students' ability to speak and understand all of the Russian material for the entire course ranged from 89 to 93 per cent correct. In a test which simulated front-line questioning, using native Russians in the role of prisoners, the five students obtained from 85 to 97 per cent of the information available to them in the answers the Russians gave to the questions.

CONCLUSION

The effectiveness of this training method as demonstrated by the ability of the students to adequately speak and understand the Russian course material supports the feasibility of machine-teaching a limited language course.

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DEVELOPMENT AND EVALUATION OF TRAINING METHODS FOR THE RAPID ACQUISITION OF LANGUAGE SKILLS

INTRODUCTION

Background of the Study

The combat soldier who captures a prisoner usually cannot speak or understand enough of the enemy language to question his captive. As a result, perishable information which would be of tactical value in the immediate combat situation is not available to the soldier who needs it most and who is in the best position to obtain it.

This problem was highlighted during a survey of human factors problems in Army intelligence training and operations, conducted by HumRRO's Training Methods Division.[1] Key military representatives taking part in this study of Army research needs suggested that a short foreign language course be designed especially for front-line questioning.

During the process of coordinating this research idea among various military agencies, two aspects emerged as being of critical importance:

(1) Developing new or improved foreign language teaching methods capable of meeting foreseeable Army language training requirements, and

(2) Determining the most useful language material to be included in the course.

Development of a practical and efficient training method appeared to pose a more difficult problem than determining course content. It was therefore agreed that the feasibility of the project should be tested by a pilot study, using an arbitrary but reasonable set ot tactical materials as course content in developing the teaching methods. Further research to develop a course containing empirically derived content would be contingent upon the success of this pilot study in solving the methodological problems.

Problem

The military problem that led to the CONTACT research is primarily a problem of communication. Combat troops ordinarily do not have a working knowledge of the enemy's language, and skilled linguist-interrogators normally are not available for duty at points where

[1] *A Survey of Human Factors Problems in Army Intelligence Training and Operations (U)*, Staff Memorandum, Training Methods Division, Human Resources Research Office, Washington, February 1958 (SECRET).

prisoners are likely to be captured. Thus information of a tactical nature usually cannot be obtained from prisoners of war immediately upon capture, and its value is lessened or lost by the time formal interrogation can be arranged.

In the future, the communication problems of the ground soldier in combat are likely to become even more acute, for these reasons:

(1) Potential combat areas lie in parts of the world where few Americans have any familiarity with the language of the native population, and where little English is spoken.

(2) The ground soldier in future combat operations probably will have to travel in small, mobile groups, perhaps partially dependent for information on prisoners of war and the local population.

Both the training and the military aspects of these communication problems had to be taken into consideration in planning the research. Other major considerations in planning the feasibility study included the following:

(1) Scarcity of competent instructors is an ever-present difficulty in foreign language training. In trying to impart even minimal foreign language skills to large numbers of combat troops, any approach that depended upon use of instructors would require so many that it would obviously be impractical. Some form of substitute for the human instructor would be needed.

(2) The length of time ordinarily spent in acquiring foreign language skills is another formidable problem in a large-scale military training effort. Ways to reduce training time to a minimum would be essential.

(3) The extent to which the research findings could be applied to different languages of military interest would depend in part on which foreign language was used in the pilot study. Selection of a language representing a major language family of military interest would make the prototype or pilot course more widely applicable and thus potentially useful.

The goal of the research effort could therefore be described as development of a prototype foreign language course that would be short, limited in content to low-level tactical material, and capable of being administered to and mastered by large numbers of men. Specific characteristics desired in the course were established as follows:

(1) The course should be approximately four to six weeks in length.

(2) A foreign language representative of the Slavic family of languages should be used.

(3) The use of human instructors operating in person should be eliminated.

(4) The language training should be such that soldiers would not need to carry supplementary training material, such as dictionaries or phrase books, in the field situation.

RESEARCH PROCEDURE

Concept and Initial Steps

The approach used in the research is based on two separate but related trends in education. The first, stemming from the work of Dr. B.F. Skinner at Harvard University (Skinner, 1954), is the use of machines in teaching, with specialized methods applied in preparing the material to be used with such machines. The second is the use of the dual-track tape recorder as an aid in foreign language teaching; such recorders are currently in use to some degree at most language schools, primarily for teaching pronunciation and providing practice in speaking. It seemed possible that these two trends could be merged to produce a foreign language teaching machine.

A search of applicable literature was carried out, with special attention to psychological literature in the learning area and to language materials.[1] Current foreign language training methods were examined to determine the kind and sequence of behaviors exhibited by instructors and students in the process of teaching and learning oral-aural foreign language skills.

Course Development

Selection of Course Content

The practical objective of the limited foreign language course envisaged in this research is to turn out soldiers who can give the necessary commands and ask appropriate questions in an enemy's own language, and then can translate the answers they receive. The language trainee therefore will need to acquire a limited speaking vocabulary, and a somewhat larger understanding vocabulary.

The "arbitrary but reasonable" tactical course content to be used in the feasibility study was drafted in English. The military material to be included was selected mainly from pertinent field and technical manuals and other military documents. Basic words, non-military but relevant, were included as deemed necessary by the researchers to ensure communication.

The content of the course[2] consisted of four major segments:

(1) Sixteen commands. For example:
"Surrender," "Hands up," "Speak slowly,"
"Repeat answer."

(2) Ten frames for tactical questions. For example:
Q. "Have you there _____?"
Q. "How far_____from us?"

[1]Items from this literature survey that are cited in this study are listed on page 26.

[2]Appendix A contains the complete course content. The English phrasing (word order, prepositional usage, etc.) presented in this report is a version directly oriented to the Russian version of the course, as used in this study. For example, certain words which would ordinarily be used in English (such as the articles, and some forms of the verb "to be") were omitted in this version not only to limit the course vocabulary to essentials but also to avoid words that have no parallel in the Russian language.

(3) One hundred words or phrases that could be meaningfully inserted into most of the question frames. For example: "gasoline," "observation points," "mine fields."

(4) One hundred basic answers, composed of words that a prisoner might use in answering a particular tactical question, but which could also be interchanged to make up other probable answers to other questions and, in addition, three non-cooperative answers. Broadly useful words such as "Yes" and "No," the cardinal and ordinal numbers, the compass headings, time divisions, and necessary connectives were included in these answers. For example:

Q. "Have you there gasoline?"
A. "Yes, also oil and tires."
Q. "How far command point from us?"
A. "Command point 300 meters on north from here."
Q. "How get to iron road (railroad)?"
A. "Turn on left and go straight ahead."

The total vocabulary contained about 450 words, with about 150 in the speaking vocabulary (primarily the first three segments above), and 300 more in the understanding vocabulary.

Selection of the Foreign Language

The language selected for the pilot study was Russian, because of its present high military priority. If the methods applied in the course proved feasible, experience gained with Russian should be directly applicable in possible later work with other Slavic languages.

Course Construction

The course was programed for presentation to the student by means of dual-track tape recorder equipment, which makes it possible to present a stimulus that cannot be erased and to record a response that can be erased if so desired. In general, in the teaching procedure used with this equipment, the material to be learned is presented on the tape; the student responds and then hears the correct response on the tape, and finally may play back both stimulus and response for comparison.

There were six major steps in constructing or programing the course: (1) translating the English course material into Russian; (2) dividing the course presentation into major sections, and grouping the specific items into lessons; (3) arranging the items within the individual lessons; (4) making up combined instruction and scoring sheets for each lesson; (5) timing the lessons and recording them on master tapes; (6) writing over-all instructions and devising appropriate study methods and aids.

Step 1. The English course material was translated into Russian, using the following criteria:

(a) The vocabulary and usage characteristic of the spoken rather than the written language should form the basis for the instruction.

(b) The translation of each item should have the same number of words as the original item.
(c) The word order in the original and in the translation should be comparable.
(d) Insofar as possible, each word used in either language should have one and only one equivalent in the other language.

The first criterion is self-explanatory. The other criteria were adopted on the grounds that learning might be made more effective if such conditions prevailed. For example, in relation to criterion (c), the effect of word order on the intelligibility of common English couplets has been evaluated by Moser et al. (1956). They found that listeners hearing two commonly coupled words could identify the pairs more successfully when the words were in the usual (expected) order than when the words were in unusual (unexpected) order. This effect could be expected to be much more pronounced if the words were in Russian and were to be translated into English.

After the course content had been translated from English into Russian, it was translated back into English by independent translators, for the purpose of identifying possible sources of ambiguity.

Step 2. The course was divided into three sections, and the specific items were grouped into lessons which reflected the different purposes of these sections:

Section A—Understanding the questions and commands (translating Russian into English).
Section B—Speaking the questions and commands (translating English into Russian).
Section C—Understanding the answers (translating Russian into English) coupled with practice in asking the questions in Russian.

This approach to organizing and presenting the course material was chosen for the following reasons:

(a) To simplify the over-all task for the student by breaking it into manageable and meaningful segments.
(b) To provide a logical framework for exposing the student to continued repetition of course content by using the same material in all three sections for different purposes.
(c) To facilitate subsequent mastery of pronunciation by having the student first learn to understand the material that he would be speaking later.
(d) To promote student motivation by
1) making immediate use of spoken English in translating the Russian in Section A, thereby letting the student enter directly and successfully into foreign language learning, and
2) presenting each section as a meaningful interim goal, so that the student could recognize definite stages in his progress.

The methods used in the three sections were devised primarily to maximize the student's acquisition and retention of acceptable pronunciation in the absence of direct human assistance during the learning process.

In learning to pronounce foreign language material, at least two problems may be distinguished:

(a) The problem of discrimination, that is, learning the differences among foreign language sounds.

(b) The problem of production, that is, learning to produce those foreign sounds.

There is some evidence (Liberman, 1957) that sound discrimination and sound production are related in a sort of regenerative feedback loop: One learns to discriminate sounds which one can differentially produce, and vice versa. Traditional teaching procedures tend to assign priority to sound production, or to a mixture of the two, with the greater stress on sound production.

Without the assistance of a teacher, learning to pronounce foreign language material is a difficult task. One way to make it less difficult is to separate it into two components: first, learning to hear the differences among foreign language sounds, and second, learning to produce them. In this study, these components took the form of first having the student translate Russian into English and, second, having him translate English into Russian.

That the Russian-to-English direction makes for easier learning than its opposite is supported by Stoddard (1929), who showed that learning to translate French into written English was faster than learning to translate English into written French. This is a special case of the finding that learning is faster where the response is more familiar to the student than is the stimulus.[1]

Additional support for using this particular component sequence is derived from a study by Doty et al. (1955), evaluating the effects on the accuracy shown by a listener who was simultaneously performing a psychomotor task. Doty found that listener accuracy scores decreased as the complexity of the psychomotor task increased. Since, for our language students, a verbal English response is much less complex (more familiar and better practiced) than a verbal Russian response, it seemed reasonable that the students would be able to make discriminations between sounds more effectively using the Russian-to-English verbal procedure than using a Russian-to-Russian verbal procedure.

In Section A of the course, the student learns the meaning of the Russian material by making a meaningful discriminatory response—giving the English translation. This procedure exposes him to the correct pronunciation of Russian sounds and sound patterns many times before he attempts to duplicate them. That this procedure may be of considerable benefit to the student is supported by the results of several studies. Murdock (1956) has shown that in a paired-associate

[1]This principle has been demonstrated by various other studies summarized in *Meaningfulness and Verbal Learning* (Underwood and Schultz, 1960).

task, after A-B is learned (in our case, Russian-English), reversing the order of the pairs to B-A (English-Russian) results in faster learning than with other comparable B-A pairs that have not been previously learned in the A-B order. Feldman and Underwood (1957) report that students, when tested, knew at least 50 per cent of B-A pairs after having learned A-B pairs; other investigators have reported larger percentages.

In Section B of the course, the student then devotes his full energies and attention to imitating the Russian material, which is now already familiar. He tries to refine his pronunciation, critically evaluating each foreign utterance he makes. In Section C, he again hears, repeats, and evaluates this same material in a question-answer context. This self-evaluation procedure provides a method by which the student acquires pronunciation skill through successive approximation. Self-evaluation has an added advantage in that, especially when done in private, it is probably less damaging to student motivation than repeated criticism by someone else would be.

The three sections are made up of the following kinds of material. Section A contains all of the question frames and their inserts, all of the commands, and the Russian cardinal numbers (used both as introductory lesson material and as part of the lesson formats). Section B contains all of the question frames and their inserts and all of the commands, and Section C contains all of the complete questions and all of their related answers. In all sections the items in each lesson are numbered in Russian, to maximize student practice on learning numbers.

The principles of graduated difficulty and meaningfulness of material were used as guides in grouping the material of each section into lessons.[1] Graduated difficulty was achieved by sequencing material on the basis of amount or length of utterance and similarity of the Russian to English. Meaningfulness of material was achieved by presenting the material, for the most part, in the form of a complete command, question, or answer.

A series of review-preview lessons were developed to cover all of the material in each section. The trainee uses these lessons for warm-ups prior to starting on the first lesson of the day.

Step 3. Specific arrangement of items in the individual lessons was worked out.

Each lesson deals with practice on a specific group of items. An "item" is a command, a question, or an answer, or any part thereof that serves as a unit of practice. The basic programing procedure for the items was derived from the method of paired associates. Essentially this consists of presenting a stimulus, leaving a response interval during which the student can make a response, and then presenting the

[1]The presentation of course material in the lessons for each of the three sections is summarized in Appendix B.

correct response. Variations of this basic procedure were used in the arrangement of all three sections of the course, including the review-preview tapes, the lessons dealing with the commands, and the introductory lesson in each section.

The items of each lesson were programed using the principles of (a) decreasing assistance, or cue dropout, and (b) varied repetition, with gradual introduction of new material along with repetition of the old.

Cue dropout was accomplished by constructing each lesson of five lists, each list containing the same material to be learned, but presented in various orders and with progressively fewer cues. In the first, or direct-cue list, each answer or response is stated completely. In the second and third lists, some of the cues are eliminated, while in the fourth and fifth lists, few or no cues are given.

The over-all idea of cue dropout stems from Skinner's work in constructing teaching machine programs. The specific form used in this study differs somewhat from that described by Skinner (1958), especially in that the first or direct-cue list gives each answer as a complete prompt to the student.

Cook (1958) reports that a prompting procedure makes for faster learning than does the conventional confirmation procedure usually used in a paired-associate task. While this may be an additional advantage, the prompting procedure was used in the direct-cue list primarily because it permits the student to make responses on his first exposure to the first list of each lesson, thus enabling him to become familiar with the material more quickly. If the confirmation procedure were used with the first list, it would mean that the initial trial of each first list would be run merely to let the student hear what the answers should be; the prompting procedure not only permits him to hear the correct answers, but also gives him the opportunity to make these answers himself in the context of the item.

Another important advantage to this procedure is that it provides graduated difficulty on another dimension—within lessons. The first list presents the student with complete assistance which then is gradually eliminated in the following lists of the lesson.

As an example of cue dropout, in the introductory lesson of Section A, which teaches understanding or translating the Russian numbers from 1 to 10 into English:

(a) The first list gives the answer just before it is requested of the student.

(b) In the second list, the numbers are presented in pairs. The first number in each pair is in serial order, so if the student can count from 1 to 10 he can give the correct answer for the first number in each pair. For the second number in the pair, the cue consists of ordering the ten numbers in two groups, the first group being even numbers (2, 4, 6, 8, 10) and the second, odd (1, 3, 5, 7, 9). The student is told about the groups and the ordering of the material.

(c) In the third list the same cues are used but the numbers in the first and second groups are randomized 8, 10, 6, 2, 4, and 9, 5, 7, 1, 3.

(d) In the fourth and fifth lists, most or all of these order cues are eliminated.

Varied repetition was attained by the procedures already described and, more specifically, by presenting identical items two or more times in a list and by presenting identical parts of items two or more times in a list. Here are several examples:

Within-Lesson Repetition

(a) In Lessons 3-6, in the first list three question frames are each presented three times, with nine different inserts used in the three sets of frames to make up the nine items of the lesson. In the second list, the same nine inserts are presented without the frames, and are repeated twice in each item. The other three lists use the same pattern of repetition as the first.

(b) In Lessons 7-8, in the first list five question frames are each presented twice, with a different insert each time, to make up 10 items. In the second list, each item consists only of multiple inserts. The other three lists are patterned like the first list.

(c) In Lessons 9-13, in the first list all 10 question frames are presented only once, with a new and different insert used in each question. Again the second list consists of multiple inserts, and the other lists are like the first.

Between-Lesson Repetition

Three groups of lessons[1] can be distinguished from each other by the number of times that a question frame is repeated in the first lesson. In the first group each frame is given three times (e.g., see Lesson 3), in the second group each frame is presented twice (see Lesson 7), and in the third group each frame is presented only once (see Lesson 9). All of the 10 question frames are covered in each of the three groups.

The specific programing procedures used in a given lesson depended on that lesson's function, its content, and its location in the section.[2]

Step 4. Instruction and scoring materials were prepared.

A combined instruction and score sheet, called a lesson panel, was prepared for each lesson in the course,[3] to be given to the student before he begins work with the tape for that lesson.

[1]See Appendix B.

[2]Examples of programing procedures and lesson item arrangements are given in Appendix C.

[3]Appendix D contains samples of lesson panels from each section of the course.

In each panel, the material which is to be learned in that lesson is described. Some actual lesson material is used to illustrate how all or most of the five lists are presented in that particular lesson. The appropriate scoring procedure is described. Wherever suitable, footnotes explaining Russian word meaning and usage are included (e.g., "machine gun" and "mortar" in Russian literally mean "bullet thrower" and "mine thrower"), as such explanations tend to make the translation task more logical and therefore easier. All visual material is given in English; in the examples from the lists, underlining is used to indicate the words the student will hear or speak in Russian.

On the back of the instruction sheet is the scoring layout appropriate to that lesson. Each response is scored by the student, using a punching procedure. Stylus punching rather than pencil checking was employed to eliminate availability of an instrument—a pencil—which could be used for cheating, that is, writing down correct answers as they are spoken on the tapes and then recording them.

A system requiring the student to score each response was adopted for these reasons: (a) to actively engage the student in evaluating his own work, and (b) to give the student the satisfaction of eventually scoring all of his utterances as correct. In addition, the scoring sheets supplied the researcher with a permanent record of response difficulty which provided a basis for revising the course to make it easier by rearrangement of the difficult items.

That scoring can have a positive effect on student performance was demonstrated by Payne and Hauty (1955), who brought about an immediate increment in task proficiency by introducing a scoring procedure. In conditioning human motor behavior, Verplank (1956) found that: "It seems important for the student to have before him a record of the points he has earned. Most students who do not have such a record either do not condition or they quit working."

Step 5. The lessons were recorded on master tapes.

Procedures for recording the master tapes of all the lessons were developed empirically. Most of the factors to be considered dealt with various aspects of timing, from the over-all length of the lessons (8 to 14 minutes) to the timing in individual items. The major problem was the timing of student response intervals; these were fixed at a period in which the correct response could be given twice, if spoken at a normal rate and assuming the response was known.

Procedures used included:

(a) Increasing rate of utterance from slow-normal on the first list to normal on the fifth list of every lesson.
(b) Using appropriate inflections for commands, questions, and answers.
(c) Using the same speaker in recording both the Russian and the English material in Sections A and B.
(d) Utilizing three different speakers in recording the answers in Section C.

Step 6. Instructions and study aids were prepared for various aspects of the course.

An over-all orientation to the course, telling the student what to do and how best to do it, was written for distribution to students at the first session of the course.[1] A set of instructions for operating the tape recorder was also distributed at that time.

An introductory statement for each section was issued to every student at the appropriate time.[2] The over-all task in the section, the component parts, and the lessons and type of items used are described in this introduction. Lists, in English, of the material used in each lesson were used as study aids, to give assistance without compromising the lessons.

In the first administration of the course, a list of possible study methods (such as ways of varying practice or use of study aids) was given to the students, along with a form on which they were to indicate how often they used these methods and whether they had altered them or devised different methods of their own. The data obtained from these forms were used to develop study guides for use by students in subsequent administrations of the course.[3]

A set of interrogation techniques appropriate to the training given in the course was devised and given to students just before their final tests.[4] The purpose of these techniques was to attempt to force the PW to give short, direct answers to the questions.

Some Problems and Their Resolutions

(1) In order to decrease learning time it was decided to eliminate, where possible, grammatical constructions that were not absolutely necessary for adequate communication. The major procedure followed was to use the Russian words in only one grammatical form or case, with a few exceptions. This meant that, in many instances, when question frames and inserts were put together the result was an ungrammatical combination that possibly could hamper communication.

This problem was approached in two ways. The first was simply to try the ungrammatical question-frame-and insert combinations on native Russian listeners and ask them to translate the questions. As the questions are relatively simple, short, and familiar, the Russians did not experience any difficulty in understanding the ungrammatical combinations.

A second approach was devised for use in the event the ungrammatical combinations did impede communication. It consisted of a procedural questioning technique: first using a grammatically correct question to establish the existence of a subject or topic represented by an insert, and then using not the inserts but whatever relevant question frames might be needed. For example, the first question

[1]This set of instructions is presented in Appendix E.

[2]A sample section introduction is reproduced in Appendix F.

[3]A sample study guide is reproduced in Appendix F.

[4]The suggested interrogation techniques are reproduced in Appendix G.

(grammatically correct in Russian) might be: "Have you there artillery?" Upon receiving an affirmative answer, the interviewer could ask further questions, such as "What kind?" and "Where?" without the necessity of repeating the insert artillery.

Fortunately, use of this second approach was not necessary in this study. However, for languages other than Russian this procedure may prove useful or even necessary.

(2) The application of the principle of meaningfulness[1] helped solve a secondary problem, that of determining optimal response size or item size. The usual problem as to item or step size in automated learning is "two-ended"—too small or too big. Presenting the material in the meaningful form of a complete command, question, or answer practically eliminated the too easy or too small step and left only the problem of the too hard or too big step. Student response records were inspected to pinpoint material that was too difficult; the size of the step was then reduced by reducing the amount of material to be learned per response.

(3) On the other hand, application of this same principle precluded any serious attempt to exploit information in the psychological literature about learning effects as a function of stimulus-response similarity or dissimilarity in a paired-associate task.

In this study, deliberate grouping of either stimuli or responses in similar or dissimilar sequences in any one lesson proved to be impossible because of the fact that the stimuli and responses were meaningful utterances usually consisting of two or more words.

While two utterances might have one or two words in common (i.e., identical or very similar), the other words in these utterances might be very dissimilar. It was therefore extremely difficult to group such stimuli and responses into the very similar or dissimilar sequences indicated by the experimental literature for best learning results. However, within these limitations stimuli and responses were grouped where possible, using either identical material or very dissimilar material in a rough attempt to obtain whatever additional learning efficiency could be realized.

(4) Learning effects of massed versus distributed practice are a function of the rate of presentation of the material. The rate of presentation in this study was determined by three types of intervals:

(a) The length of the within-item interval depends on the length of the stimulus and of the correct response, plus the student translation space which was always at least twice as long as the time it would take to give the correct response if it were known. This built-in extra response interval served the purpose of giving the student a little more time to produce the correct response before the confirming response was given. It seems reasonable to assume that increasing the response interval over the minimum time necessary to make the response will add to efficiency of learning.

[1]See description of Step 2 procedures, p. 7.

(b) The between-item interval in all lists of lessons in Sections A and C consisted of a natural breath-pause of the speaker. In all lists in Section B, sufficient time was allowed after each item for the student to repeat the correct or confirming response for that item before going on to the next. This permitted the student additional speaking practice.

(c) The between-list interval in each lesson was of the nature of a couple of breath-pauses—at the most, three or four seconds.

It is clear that these latter two intervals make for massed practice rather than distributed practice in the learning process. Underwood (1961), after 10 years of research on massed and distributed practice, felt that even under the most favorable conditions for facilitation of learning by distributed practice, its use could not be recommended in an applied setting where verbal materials are to be mastered.

(5) The rate at which stimuli were presented and responses were demanded was fixed by the machine—set up, of course, on the basis of the intervals just mentioned. However, it was possible for the student to turn off the machine at any time so that, while the machine set the pace, it was under the direct control of the individual student according to his needs.

(6) No use was made in this course of a procedure quite frequently employed in conventional language training, that of phonetics drill.[1] Some basis for the conclusion that sound differentiation and production are better accomplished using sounds in their actual contexts has been provided by several experiments. With regard to phonetics, Schatz (1954) shows that in actual speech the context of an initial voiceless stop is an important factor in its perception, these results agreeing with those obtained for synthetic speech. Harris (1958) reports that differentiation of certain fricatives is accomplished primarily on the basis of cues obtained in other parts of the utterance. Ladefoged and Broadbent (1957) show that linguistic information conveyed by a vowel sound depends not on the absolute values of its formant frequencies but on the relationship between the formant frequencies of that vowel and those of other vowels in utterances pronounced by the same speaker.

Another reason for not using phonetic drill is that, for the most part, the sounds involved have no meaning and, from the typical student's point of view, represent nonsense utterances. Task meaningfulness in all its aspects was deemed important enough in promoting learning efficiency to militate against the use of phonetic drill.

(7) One of the basic tenets of language teaching is that repetition and overlearning are necessary and—it may be added—necessary evils. Two major ways were devised to introduce the desired repetition without incurring motivational decrement:

First, the division of the course into three sections having different objectives provided a logical framework for

[1]Drill on nomenclature and function of the speech musculature, another commonly used procedure, was also omitted because (a) no evidence was found to support its use, and (b) it seems to fall into the class of things that are "nice to know" as compared to those classified as "need to know."

exposure to continued repetitions of material, by using the same material in all three sections for palpably different purposes.

Second, the five-list format of each lesson, with each list presenting the same material but varying both in order and in amount of cue assistance, provided repetition of material that students (according to interviews), did not consider either boring or repetitive.

Many other techniques for presenting the same material repeatedly were also utilized. For example, the scoring procedure in Section B requires the student to first record his lesson and then go over it again for scoring purposes, thus exposing him once more to the spoken Russian. Again, numbering each item in all the lessons forced the student to hear the Russian numbers, 1 to 99, thousands of times for a definite purpose—that of keeping track of where he was in the lesson.

(8) Several techniques were used in an effort to keep students motivated so that they would continue to work on the intensive basis demanded by a course of this nature:

(a) The general programing sequence first required the student to use only his native tongue, thereby assuring student capability of immediately producing and scoring correct responses.

(b) Use of graduated difficulty and decreasing assistance in programing assured initial correct responses, plus a high probability of correct responses in subsequent lists.

(c) Confirmation of every correct student response was considered a reinforcing procedure.

(d) The criterion of learning used for every lesson—a correct English translation of the Russian, or a correct Russian translation of the English on five consecutive lists, as recorded and preserved on the tape—clearly structures the task and gives the student a reasonable goal to strive for, with a definite feeling of completion and satisfaction when this goal is achieved.

(e) The scoring procedure by which the student marks his correct responses can also be considered a reinforcing procedure.

(f) The recognition that the present language course has a clear and achievable terminal point helps to spur the student on or at least tends to prevent him from quitting.

Course Equipment

There were four items or categories of course equipment. This material constitutes a training package that can be sent to any suitable location.

Recorder Equipment. The tape recorders were dual-track language teaching recorders modified to handle the Fidelipac tape cartridge, which has a 600-foot tape capacity. The use of this cartridge

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eliminated threading tape into the reels and simplified the operation of the recorder. A pair of earphones and a microphone attached to a flexible stand were used with these recorders.

Taped Course Material. Five copies of each master tape were put into cartridges to make five complete sets of course material. A set consisted of 65 lesson cartridges, 16 review-preview cartridges, and one pronunciation cartridge. In addition to the 82 cartridges in each set, there were seven test tapes.

Scoring Equipment. A legal-size clipboard covered with corrugated cardboard was used to hold a score sheet printed on the reverse side of an instruction panel. Students used a metal stylus to punch the score sheets.

Printed Course Material. This category includes the lesson panels, general instructions, section introductions, study aids, and other materials necessary for complete course administration, which were duplicated for distribution to the students.

Learning Criteria and Scoring

Section Criteria

In all three sections, achievement of the criteria of mastery necessitated active participation in the learning process, and provided a terminal point for each lesson, thus completely structuring the task. During the course of the lesson the student received reinforcement for task completion through the self-scoring procedure, and was spared the problem of meeting the nebulous criteria of achievement common to the standard methods of programing foreign language training.

In Section A, the criterion of achievement for each lesson was a correct English translation of the Russian on five consecutive lists, as recorded and preserved on the student track of the tape. The student-scored sheet accompanying each lesson was expected to exhibit evidence of gradual acquisition and final mastery of the material. A taped test designed to determine the number of Russian words or phrases (inserts) and Russian commands the student could correctly translate into English was given at the end of the section.

In Section B, the learning criterion for each lesson was a correct Russian translation of the English on five consecutive lists, as recorded and preserved on the student track of the tape. A list was considered correctly translated when the student scored all his responses as Very Good, or when he scored most of his responses as Very Good and the rest as Pretty Good; lists with any responses scored Not So Good were not acceptable. Delayed scoring (scoring after going through the entire lesson) was used in this section, providing the student with an additional comparison of the correct foreign language model and his own response. A taped test designed to determine the number of English words or phrases (inserts) and English commands the student could correctly translate into Russian was given at the end of the section.

In Section C, the learning criterion for each lesson was a correct English translation of the Russian and a correct Russian translation of the English on five consecutive lists, as recorded and preserved

on the student track of the tape. A taped test designed to determine the number of Russian answers the student could translate correctly into English was given at the end of the section.

End-of-Course Tests

After completing the course each student was given two tests: (1) a final tape test in which student performance in dealing with all the course material was measured, and (2) a test in which students questioned native Russians in a simulated front-line combat situation.

Course Administration

Administration

This Russian course was administered at The George Washington University, Washington, D.C. Five small classrooms, each furnished with a table and a chair, were provided for use by the students. A monitor's desk was placed in the hall next to these rooms. The tape-lesson library, the recorders and accessories, and the printed materials were kept in cabinets near the monitor's desk.

The course was administered twice, each time to a group of five different soldiers. The first administration was a trial of equipment and procedures, with the experimenters closely supervising the students. There were frequent discussions between students and experimenters about course content and procedure. The results of this trial administration led to changes in some of the lessons, panels, and study methods, which were incorporated into the course for the second administration.

In the second administration, a new group of five soldiers operated the school themselves without any interference from the experimenters. The rest of this report will deal only with this second administration and its results.

Subjects

The five students were U.S. Army enlisted men who had just completed their basic training. These men were stationed at the Student Detachment, Fort McNair, Washington, D.C., for the time it took them to complete the course. Language aptitude scores and other information about these students are given in Table 1.

Course Operational Procedure

On the first day, the students were given a language aptitude test and a brief orientation. Each man was assigned one of the small rooms and a set of equipment. After he assembled his equipment, he read the various instructions and study guides, picked up the first tape-cartridge lesson with its panel, and started to work. When he reached criterion on the first lesson, he replaced his recorded cartridge and put his punched score sheet on the monitor's desk. He then picked up his next lesson and repeated the process.

The procedure on succeeding days was similar, except that each morning the student began with a review-preview tape which

Table 1

Student Characteristics

Student	Age	Education	Modern Foreign Language Experience	AFQT Score[a]	Modern Language Aptitude Test[b]				
					CONTACT Student Raw Scores	Percentile 11th Grade Males[c] (N = 233)	Percentile College Freshmen[d] (N = 465)	Percentile Air Force EM[e] (N = 177)	Percentile Army Language School[f] (N = 781)
F	23	College Graduate	None	77	129	95	65	85	85
G	23	2 Years College	None	77	125	90	60	75	85
H	21	2 Years College	None	99	109	80	40	55	70
I	23	2 Years College	Spanish	61	98	65	25	40	55
J	18	11th Grade	None	52	75	30	10	10	20

[a]The Armed Forces Qualification Test. A sample of 498 Army recruits yielded a mean score of 70 with a standard deviation of 20.3. See A.G. Bayroff *et al., Relationship of AFQT to Rated Basic Training Performance*, Technical Research Note 106, Personnel Research Branch, The Adjutant General's Office, Washington, February 1960.

[b]Carrol and Sapon, The Psychological Corporation, 1958.

[c]Mean raw score in base group, 90.7; SD 24.4.

[d]Mean raw score in base group, 115; SD 26.4.

[e]Based on a group of 177 Air Force enlisted men taking a "trial course" in Mandarin Chinese at a recruit training center. Mean raw score 107, SD 24.9.

[f]Mean raw score in base group, 97.1; SD 29.1.

covered the material of the preceding day and touched on material that was to come. After going through this tape once, he returned it to the tape library, took out his next scheduled lesson, and so on. The student's daily schedule was as follows:

0800	Report to School	1200 to 1330	Lunch
0800 to 0810	Set up equipment	1330 to 1620	Lessons
0810 to 0830	Review-Preview Tape	1620 to 1630	Put away equipment
0830 to 1200	Lessons	1630	Leave School

Two methods, described previously, were used to keep track of what the student did on each lesson. First, the student recorded verbal responses on the lesson tapes. If all the items in a lesson were answered correctly, the tape was kept as a permanent record. If some items were incorrect, the student repeated the lesson, automatically erasing all of the old responses while recording his new ones, until all the items were answered correctly. Second, the student scored his own responses by punching a hole in an appropriately marked place on his score sheet to designate each response he made as correct, partly correct, or wrong.

A member of the research staff who did not speak Russian sat at the monitor's desk. He inspected the punched score sheets for evidence of gradual acquisition and mastery of the material, recorded the times when the lessons were taken out and returned, and noted any rest pauses. There was practically no interaction between the monitor and the students.

Every student took a self-administered taped test after each section and, at the end of the course, a final taped test that covered all the course material. The final event in the course was the simulated questioning test using native Russians as subjects to be questioned.

RESULTS

Time Requirements

Total time required for a student to complete the course, with each student working at his own rate, ranged from 22 1/2 to 24 days. The times required by each student to complete each section of the course are listed in Table 2.

Final Tape Test

In this comprehensive test, the student first translated the English commands into Russian. He was next given an English question which he translated into Russian, then a complete Russian answer which he translated into English, and so on with the rest of the material.

The student was evaluated both on speaking and on understanding Russian. The spoken Russian of all five students was first scored by a native Russian expert on the research staff. Each student was then rescored on the adequacy of his speaking ability by one of four native

Table 2

Time Required for Completion of Course

Student	Number of Days Required			
	Section A	Section B	Section C	Total
F	4	6 1/2	12 1/2	23
G	4	7 1/2	11 1/2	23
H	4	8	11 1/2	23 1/2
I	5	7	12	24
J	4	7	11 1/2	22 1/2

Russians who are professors of Russian at the U.S. Navy Language School in Washington. The evaluator who scored each tape had never before heard that particular student speak Russian. Evaluation consisted of listening to the student's spoken Russian and writing down the English translation if the Russian was understandable. An over-all evaluation of each student's pronunciation was also made. The agreement among scorers on all the course material was very high.

Scores on speaking Russian ranged from 86 to 93 per cent of total course material correctly spoken, with over-all evaluations of pronunciation ranging from fair to excellent.

Scores on understanding Russian ranged from 89 to 93 per cent correct.

Scores on the total test ranged from 90 to 93 per cent correct.

The final tape test scores, given as percentages, and the pronunciation rating for each student, are presented in Table 3.

Table 3

Final Tape Test Scores and Pronunciation Ratings

Student	Test Scores (% Correct)			Pronunciation Ratings [a]
	Speaking	Understanding	Total	
F	93	93	93	Good
G	89	92	91	Excellent
H	92	89	90	Excellent
I	89	97	93	Good
J	86	98	91	Fair

[a] After scoring the test, the evaluator rated the student's over-all pronunciation according to the following scale: *1*, Excellent—very clearly understandable to a native Russian; *2*, Good—clearly understandable to a native Russian; *3*, Fair—understandable to a native Russian; *4*, Poor—but understandable to a native Russian; *5*, Not understandable.

Simulated Front-Line Questioning Test

The simulated questioning test assessed the student's ability to use the materials of the course in a practical situation. In taking this test, each student spoke Russian for the first time with another human being—a native Russian, whom he had never seen or heard before, and who had never seen or heard him before. None of the four Russians who were questioned in this test was familiar with the course or test material as such.

In the test, the student questioned a native Russian in the presence of the experimenter. The student was given about 40 cards with an English question on each. He translated each question into Russian, heard the Russian's answer, and translated this answer into English. The Russian had been given a story written in English for a fictitious military situation and had been instructed to act as a cooperative PW. From this story he composed the answers he gave in Russian to the student's questions.

The simulated front-line questioning test scores are presented in Table 4. The percentage of answers correctly translated by the students ranged from 85 to 97 per cent.

Table 4

Simulated Front-Line Questioning Test Scores

Student	Number of Questions Asked	Per Cent of Answers Correctly Translated
F	40	91
G	41	85
H	43	97
I	41	93
J	40	90

Analysis of the answers given by the Russians playing the role of PW indicates that the initial answers averaged only three words in length, showing that the questions and the interrogation techniques were effective in eliciting short answers. The relatively few secondary answers averaged seven or eight words in length. The limited language contained all but three per cent of the words the Russians used in their answers, and some of these new words were not essential to the meaning of the answer; that is, the soldiers obtained the meaning from the context of the answer. Relatively few misunderstandings resulted from the fact that the soldiers' knowledge of Russian grammar was very limited.

DISCUSSION

Male native Russians with a military background and language teaching experience were needed to act as PW's in the simulated questioning situation, and to score and evaluate the students' spoken Russian. Finding men with these qualifications posed a considerable problem, and only four were obtained. One evaluator therefore had to be used twice in the questioning situation, and another twice in the scoring and evaluating situation, while the others were used once in each situation.

Granting that this state of affairs might lessen the effectiveness of the evaluations, care was taken to make sure a student was never tested twice by the same Russian. Another precaution exercised was to let approximately a month elapse between the questioning situation and the scoring and evaluating of the tapes of the students' spoken Russian.

Another point that could be raised is that part of the basic structure of the language material used—that is, the ten question frames—is so limited that the testers would quickly recognize at least in part what was being asked, even if the spoken material was not clearly understandable. However, the results of over-all evaluation of the students' pronunciation do not indicate that this had any great bearing, since ratings ranged from excellent to fair. Even if this point were valid in the present experimental test, the same effect should carry over to an actual interrogation situation.

The answers given by the role-playing Russians in the simulated front-line questioning test make it clear that this test is an imperfect criterion of the effectiveness of the limited language for actual combat use. However, the ultimate criterion—questioning of PW's in an actual combat situation—is obviously not possible at the present time.

A word concerning student motivation is in order. It must be remembered that these five soldiers who took the course knew they were participating in an experiment. Four of the five had had previous college training, and all five found studying at The George Washington University a satisfactory experience, according to their interviews. These experimental conditions, then, may have created a higher level of motivation than that which would be produced by a nonexperimental administration of the course.

However, the special programing of the course to assure successful responding and continual reinforcement seems to produce and sustain a satisfactory level of motivation. This level is high enough to make it seem likely that the same course, administered under nonexperimental conditions to students of equal aptitude, would produce results comparing favorably with those recorded in this experiment.

Further support for the prediction that the course could be applied successfully is derived from the advantages inherent in the fact that

the experimental course was completely automated. Automation means that, in any nonexperimental administration of the course, precisely the same lesson material would be presented in exactly the same fashion. In addition, use of tape recorders instead of language instructors makes this standardized lesson material available for as much repetitive practice as would be necessary for each individual trying to attain the desired level of proficiency.

CONCLUSION

(1) The effectiveness of this training method, as demonstrated by the ability of the students to adequately speak and understand the Russian course material, supports the feasibility of machine-teaching such a limited language course.

(2) The basic structure of the limited language and the related interrogation techniques of this course seem to be reasonably effective as a tool for obtaining short, understandable answers from non-English-speaking personnel.

The possibility of machine-teaching a full-scale foreign language is suggested by this research. Also, this concept of a limited language—possibly even with the present format of question frames and inserts plus groupings of the most probable answers—could be applied to achieve economy of training time in other situations in which there is a need for some, but not complete, foreign language ability.

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AND
APPENDICES

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Appendix A

THE COMPLETE COURSE CONTENT IN ENGLISH

Commands

1. Attention
2. Surrender
3. Drop weapon or I shoot
4. Hands up
5. Come here
6. Forward march
7. Stop
8. Silence
9. Stand
10. Sit
11. Give me short and clear answer
12. Write all ciphers
13. Speak slowly
14. Show
15. Repeat answer
16. Good

Questions and Inserts

Question #1

Your _____?

1. rank?
2. personal number?
3. password?
4. countersign?
5. full composition?
6. detachment?
7. battalion?
8. regiment?
9. name?
10. age?

Question #2

Have you there _____?

1. atomic weapon?
2. mortars?
3. machine guns?
4. rockets?
5. mines?
6. observation points?
7. anti-tank guns?
8. reserves?
9. gasoline?
10. tanks?

Question #3

How many _____?

1. trucks?
2. planes?
3. automobiles?
4. jeeps?
5. companies?
6. bazookas?
7. riflemen?
8. troops?
9. platoons?
10. people?

Question #4

What kind _____?

1. barricades?
2. guns?
3. maps?
4. buildings?
5. roads?
6. bridges?
7. ditches?
8. patrols?
9. mine fields?
10. anti-gas masks?

Question #5

Where_____?

1. medical points?
2. artillery?
3. stores?
4. positions?
5. pillboxes?
6. comrades?
7. telephones?
8. sentries?
9. prisoners?
10. fire throwers?

Question #6

How far_____from us?

1. command point?
2. trenches?
3. river?
4. camp?
5. assembly point?
6. equipment stores?
7. front lines?
8. radio station?
9. outposts?
10. headquarters?

Question #7

How get to_____?

1. water?
2. ford?
3. iron road?
4. lake?
5. tunnel?
6. kitchens?
7. rear?
8. battery?
9. village?
10. reinforced area?

Question #8

When you _____?

1. came?
2. received grenades?
3. received parachutes?
4. ate?
5. crossed?
6. wounded?
7. received reinforcements?
8. saw this?
9. heard this?
10. retreated?

Question #9

Who _____?

1. on right?
2. on left?
3. behind you?
4. before you?
5. behind hill?
6. commands?
7. in house?
8. gives orders?
9. on ridge?
10. in valley?

Question #10

You _____?

1. alone?
2. sick?
3. hungry?
4. want drink?
5. sure?
6. deserter?
7. reinforce positions?
8. machine gunner?
9. scout?
10. medic?

Answers

A-0

1. I not know.
2. I not remember.
3. I not understand.

A-1

1. My rank private or corporal.
2. My personal number 7000.
3. At us, no.
4. Our countersign Stalin.
5. One hundred soldiers, 15 lieutenants, and one lieutenant colonel.
6. Small partisan detachment.
7. Tenth battalion on left.
8. My regiment—Sixth Engineering Regiment.
9. I, Captain Ivanoff, Signal Corps.
10. Twenty-four years, maybe even 25 years.

A-2

1. Yes, at us is atomic gun.
2. Yes, mortars and also howitzers.
3. No, our platoon lost all machine guns.
4. Yes, rockets mounted near from barracks.
5. No, terrain here mined.
6. Yes, there in group bushes, two observers.
7. Yes, each barricade there has anti-tank guns.
8. Yes, Ninth Regiment stands in reserve.
9. Yes, also oil and tires.
10. No, we sent all tanks in rear.

A-3

1. Thirteen or 14, but all damaged.
2. Seventeen helicopters and 19 bombers.
3. Autopark overfilled, there almost 12.
4. There only one jeep and 20 trailers.
5. By least measure 53 companies.
6. Each brigade has 30 or 40.
7. Eighty soldiers, one major, and one colonel.
8. Almost all troops—approximately 6000.
9. Our platoon and yet one.
10. At us there 200 men.

A-4

1. Pile earth and boulders.
2. Light machine guns, pistols, and carbines.
3. At us only very poor maps.
4. Three wooden and two brick buildings.
5. Paved roads with deep craters.
6. Strong, steel pontoon bridges.
7. Shallow ditches which now dry.
8. Motorized reconnaissance patrols with radios.
9. Mine fields without safe approaches.
10. New anti-gas masks, latest model.

A-5

1. Medical point located in hollow not far from swamp.
2. Artillery transferred yesterday on other sector.
3. Military stores in concrete warehouse.
4. Positions behind wooded crest on north.
5. Pillboxes not far from fork highway on west.
6. Hiding in woods on south behind mountain.
7. Switchboard and telephones in cellar.
8. Sentries behind trees not far from pond.
9. On east behind thick hedge.
10. Fire throwers in dark cave on flank.

A-6

1. Command point 300 meters on north from here.
2. Covered trenches 90 meters from here.
3. Five hundred meters on east.
4. On island about 1/2 kilometer from here.
5. Four hundred meters on south.
6. Equipment stores, 60 or 70 versts from here.
7. We very near, only 700 meters.
8. State radio station 600 kilometers from town.
9. Outposts in ravine 800 meters on west.
10. Fifty meters from red barn and stables.

A-7

1. Take lower path and there water.
2. Go along bank 90 meters and there ford.
3. Turn on left and go straight ahead.
4. Turn on right and you not can miss it.
5. Go back 15 miles and tunnel in valley.
6. Kitchens behind knoll near from stream.
7. Go in easterly direction; follow behind green vehicles.
8. Battery masked in pine wood.
9. Wire fence leads straight to main street.
10. Crawl in wet grass to end meadow.

A-8

1. We came 16 days before big storm.
2. We received grenades today in 11 o'clock.
3. We not received parachutes, only rifles and bayonets.
4. We ate yesterday evening.
5. We crossed temporary bridge yesterday night.
6. In April, 12 days before occupation.
7. In Monday, after dinner, on last week.
8. Before attack in Wednesday.
9. Only now in radio news.
10. After heavy fighting in August month.

A-9

1. On right from us, Seventh Infantry Regiment.
2. On left, I think stands Eighth Division.
3. Self-propelled artillery or other technical regiment.
4. Polish shock unit, mobilized in Warsaw.
5. Nobody, all left late in Friday.
6. At us no commander, all officers were killed.
7. Woman sniper hidden in house.
8. Senior or junior sergeant.
9. Chinese volunteers without winter shoes or skis.
10. Local population, cattle, and horses.

A-10

1. No, there 18 peasants in stone hut.
2. Yes, help please, give me medicine.
3. No, I tired and sleepy.
4. Yes, please give me tea, bread, and also cigarettes.
5. Certainly, I counted exactly 5000.
6. No, I not deserter, I refugee.
7. Yes, fresh forces came only now.
8. No, I messenger—here documents, reports, and letters.
9. Yes, and specially trained demolitionist.
10. Yes, I medic but not doctor.

Appendix B

GROUPING OF ITEMS INTO LESSONS FOR EACH SECTION

Section A is divided into six groups for a total of 17 lessons, translating questions, commands, and numbers from Russian into English.

Group (a)	Introductory Lesson	Numbers from 1 to 10
Group (b)	Lesson #1	One-word question frames—5 items
	Lesson #2	Multi-word question frames—5 items
Group (c)	Lesson #3	First three question frames, each presented three times with a new insert for each repetition.
	Lesson #4	Next three question frames, each presented three times with new inserts.
	Lesson #5	Next three question frames, each presented three times with new inserts.
	Lesson #6	Last question frame plus two of the most difficult frames from above, each presented three times with new inserts.
Group (d)	Lesson #7	First five question frames, each presented twice with new inserts.
	Lesson #8	Last five question frames, each presented twice with new inserts.
Group (e)	Lessons #9-13	Ten question frames, each with new inserts.
Group (f)	Lesson #1	One-word commands—10 items
	Lesson #2	Multi-word commands—5 items
	Lesson #3	Multi-word commands—5 items

Section B is divided into five groups for a total of 19 lessons, asking the questions and giving commands in Russian.

Group (a)	Lesson #14	First five (shortest) question frames.
	Lesson #15	Last five question frames.
Group (b)	Lesson #16	First two (shortest) question frames, each presented four times with new inserts.
	Lessons #17-20	In each lesson, the next two question frames, each presented four times with new inserts.
Group (c)	Lesson #21	First five question frames, each presented twice with new inserts.
	Lesson #22	Last five question frames, each presented twice with new inserts.

Group (d)	Lessons #23-26	In each lesson, five to ten question frames, each with a new insert.
Group (e)	Lesson #27	One-word commands.
	Lesson #28	Multi-word commands.
	Lesson #29	First eight commands (2 most difficult, repeated).
	Lesson #30	Last eight commands (2 most difficult, repeated).

Section C is divided into five groups for a total of 29 lessons, asking questions in Russian and translating the related Russian answers into English.

Group (a)	Introductory Lesson	The same question frame presented three times coupled with three different inserts and three non-cooperative answers.
Group (b)	Lessons #31-40	In each lesson, one of the 10 question frames presented four times, coupled with four different inserts, and their related answers. These lessons use all 10 question frames, 40 inserts, and 40 related answers.
Group (c)	Lessons #41-50	In each lesson, one of the 10 question frames presented four times, coupled with four different inserts and their related answers. These lessons use all 10 question frames, 40 more inserts, and 40 more answers.
Group (d)	Lessons #51-55	In each lesson, two of the 10 question frames presented twice, coupled with a different insert and their related answers. These lessons use all 10 question frames, the remaining 20 inserts and 20 related answers.
Group (e)	3 lessons consisting only of the new words encountered by the student in going through Section C.	

Appendix C

EXAMPLES OF PROGRAMING PROCEDURES AND ITEM ARRANGEMENTS

Examples of Programing Procedures

Section A

A. Direct cue

Russian
Correct English translation

Same Russian
Student translation space

B. Item repetition

1. Russian
   Student translation space
   Correct English translation
2. Exact repeat of Item 1 above

C. Off-step repetition

1. Russian (name) - Russian (age)
   Student translation space
   Correct English translation
2. Russian (age) - Russian (rank)
   Student translation space
   Correct English translation
3. Russian (rank) - Russian (battalion)
   Student translation space
   Correct English translation

D. Randomized repetition

3.
3.
1.
1.
2.
2. etc.

E. Serial order duplication

1.
2.
3.
1.
2.
3. etc.

F. Randomized order duplication

3.
2.
1.
3.
2.
1. etc.

Section B

G. Single echoic cue

Russian
Imitation space
English
Student translation space
Correct Russian translation
(extra imitation space)

Double echoic cue

Russian
First imitation space

Same Russian
Second imitation space
etc.

Section C

H. Direct-ordered single cue

1. First English word of answer
Russian translation equivalent
Student English translation space
Second English word of answer
Russian equivalent
Student English translation space
etc.

I. Randomized singles

1. Random Russian word from answer
Student English translation space
Correct English translation

Next random Russian word from same answer
etc.

Examples of Item Arrangements[1]

Section A—Lesson #2

First list	- direct cue
Second list	- serial order and item repetition
Third list	- randomized item repetition
Fourth list	- randomized order duplication
Fifth list	- randomized

Section B—Lesson #25

First list	- single echoic insert cue + single echoic question cue
Second list	- double echoic insert cue
Third list	- serial order and item repetition
Fourth list	- randomized order and item repetition
Fifth list	- randomized order

Section C—All Lessons

First list	- echoic question cue + direct complete answer cue
Second list	- direct-ordered singles cue + complete answer serial order
Third list	- randomized singles + varied randomized complete answers
Fourth list	- randomized singles + varied randomized complete answers
Fifth list	- randomized questions + varied randomized complete answers

[1]The list of item arrangements for all lessons is available on request to the Training Methods Division, HumRRO.

Appendix D

SAMPLES OF PANELS FROM EACH SECTION OF THE COURSE

Introductory Lesson—Section A

In this lesson you will learn to understand and translate into English the Russian numbers from one to ten. *All your answers or translations will be in English.*

The first list is always an easy one. You are given the correct answer just before you have to give it. This gives you a chance to start remembering what the words mean because you will have to remember these word meanings on the other lists without such direct help.

When you start the tape the first thing you will hear is the Russian word for "Ciphers,"* the Russian words for "First List," and then the items. Here is how the first list is put together (words underlined are spoken in Russian):

		Ciphers	
		First List	
One	One	One	(translation space)
Two	Two	Two	(translation space)

and so on, up to ten.

Listen to the Russian, the English translation, and the Russian again. Then give the English translation in the translation space. Do this for all ten items. After each item score yourself as correct.

The second list will sound like this:

	Second List	
One—Two	(translation space)	One—Two
Two—Four	(translation space)	Two—Four

Listen to the two Russian numbers. *Then try to give their English translation before the tape does.* The first number in each pair is in order from one to ten. The last numbers are even and odd in order, that is: 2, 4, 6, 8, 10 and 1, 3, 5, 7, and 9.

The third list is like the second. There are a pair of numbers in each item and the first number of each pair is in order from one to ten. The second number is not in any order. The third list sounds like this:

	Third List	
One—Eight	(translation space)	One—Eight
Two—Ten	(translation space)	Two—Ten

The fourth list and fifth list again give pairs of numbers and the first number of each pair is in order from one to ten. As usual try to give the correct translation before the tape does. Keep going over the lesson until you have given correct answers on all five lists. Your score sheet will then show all C punches for five lists and your correct translations will be recorded on the tape. You are now ready for Lesson #1.

**Cipher:* In Russian when a number stands alone it is called "cipher" rather than "number" as we call it in English. The Russians use the word "number" only when it is attached to something like "Lesson Number 5" or "personal number." However, both of these Russian words, cipher and number, sound very much like their English translations so it should be easy to remember them.

Three: Since the Russian word for "three" sounds very much like the English word "three," it should be easy to translate and remember.

Score Sheet

A

First List				Second List				Third List				Fourth List				Fifth List			
	C	P	X		C	P	X		C	P	X		C	P	X		C	P	X
1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0
2	0	0	0	2	0	0	0	2	0	0	0	2	0	0	0	2	0	0	0
3	0	0	0	3	0	0	0	3	0	0	0	3	0	0	0	3	0	0	0
4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
5	0	0	0	5	0	0	0	5	0	0	0	5	0	0	0	5	0	0	0
6	0	0	0	6	0	0	0	6	0	0	0	6	0	0	0	6	0	0	0
7	0	0	0	7	0	0	0	7	0	0	0	7	0	0	0	7	0	0	0
8	0	0	0	8	0	0	0	8	0	0	0	8	0	0	0	8	0	0	0
9	0	0	0	9	0	0	0	9	0	0	0	9	0	0	0	9	0	0	0
10	0	0	0	10	0	0	0	10	0	0	0	10	0	0	0	10	0	0	0

B

First List				Second List				Third List				Fourth List				Fifth List			
	C	P	X		C	P	X		C	P	X		C	P	X		C	P	X
1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0
2	0	0	0	2	0	0	0	2	0	0	0	2	0	0	0	2	0	0	0
3	0	0	0	3	0	0	0	3	0	0	0	3	0	0	0	3	0	0	0
4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
5	0	0	0	5	0	0	0	5	0	0	0	5	0	0	0	5	0	0	0
6	0	0	0	6	0	0	0	6	0	0	0	6	0	0	0	6	0	0	0
7	0	0	0	7	0	0	0	7	0	0	0	7	0	0	0	7	0	0	0
8	0	0	0	8	0	0	0	8	0	0	0	8	0	0	0	8	0	0	0
9	0	0	0	9	0	0	0	9	0	0	0	9	0	0	0	9	0	0	0
10	0	0	0	10	0	0	0	10	0	0	0	10	0	0	0	10	0	0	0

C

First List				Second List				Third List				Fourth List				Fifth List			
	C	P	X		C	P	X		C	P	X		C	P	X		C	P	X
1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0
2	0	0	0	2	0	0	0	2	0	0	0	2	0	0	0	2	0	0	0
3	0	0	0	3	0	0	0	3	0	0	0	3	0	0	0	3	0	0	0
4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
5	0	0	0	5	0	0	0	5	0	0	0	5	0	0	0	5	0	0	0
6	0	0	0	6	0	0	0	6	0	0	0	6	0	0	0	6	0	0	0
7	0	0	0	7	0	0	0	7	0	0	0	7	0	0	0	7	0	0	0
8	0	0	0	8	0	0	0	8	0	0	0	8	0	0	0	8	0	0	0
9	0	0	0	9	0	0	0	9	0	0	0	9	0	0	0	9	0	0	0
10	0	0	0	10	0	0	0	10	0	0	0	10	0	0	0	10	0	0	0

D

First List				Second List				Third List				Fourth List				Fifth List			
	C	P	X		C	P	X		C	P	X		C	P	X		C	P	X
1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0
2	0	0	0	2	0	0	0	2	0	0	0	2	0	0	0	2	0	0	0
3	0	0	0	3	0	0	0	3	0	0	0	3	0	0	0	3	0	0	0
4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
5	0	0	0	5	0	0	0	5	0	0	0	5	0	0	0	5	0	0	0
6	0	0	0	6	0	0	0	6	0	0	0	6	0	0	0	6	0	0	0
7	0	0	0	7	0	0	0	7	0	0	0	7	0	0	0	7	0	0	0
8	0	0	0	8	0	0	0	8	0	0	0	8	0	0	0	8	0	0	0
9	0	0	0	9	0	0	0	9	0	0	0	9	0	0	0	9	0	0	0
10	0	0	0	10	0	0	0	10	0	0	0	10	0	0	0	10	0	0	0

E

First List				Second List				Third List				Fourth List				Fifth List			
	C	P	X		C	P	X		C	P	X		C	P	X		C	P	X
1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0
2	0	0	0	2	0	0	0	2	0	0	0	2	0	0	0	2	0	0	0
3	0	0	0	3	0	0	0	3	0	0	0	3	0	0	0	3	0	0	0
4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
5	0	0	0	5	0	0	0	5	0	0	0	5	0	0	0	5	0	0	0
6	0	0	0	6	0	0	0	6	0	0	0	6	0	0	0	6	0	0	0
7	0	0	0	7	0	0	0	7	0	0	0	7	0	0	0	7	0	0	0
8	0	0	0	8	0	0	0	8	0	0	0	8	0	0	0	8	0	0	0
9	0	0	0	9	0	0	0	9	0	0	0	9	0	0	0	9	0	0	0
10	0	0	0	10	0	0	0	10	0	0	0	10	0	0	0	10	0	0	0

Lesson #4—Section A

In Lesson Number Four you will learn to understand nine Russian questions. There are nine items in each list, numbered from 41 to 49. After you have heard and practiced the correct translations in the first list, your job on the other lists is to listen to the Russian and then try to give the correct English translations before the tape does.

On the first list, the first three items use the same question, the next three items use another question, and the last three items use a third question. Each question asks about a different thing, using one of the separate words that go with that question. The first list sounds like this (words underlined are in Russian):

Lesson Number Four

First List

Forty-one	What kind barricades?	What kind barricades?	What kind barricades?	(trans. space)
Forty-two	What kind mine fields?	What kind mine fields?	What kind mine fields?	(trans. space)
Forty-three	What kind anti-gas masks?	What kind anti-gas masks?	What kind anti-gas masks?	(trans. space)
Forty-four	Where artillery?	Where artillery?	Where artillery?	(trans. space)

and so on for nine items.

Only the separate words are given on the second list. There is a pair of them in each item. They are in the same order as they were in the first list and the first one of each pair is the same as the last one of the item before. The second list sounds like this:

Second List

Forty-one	Barricades—Mine fields	(translation space)	Barricades—Mine fields
Forty-two	Mine fields—Anti-gas masks	(translation space)	Mine fields—Anti-gas masks

The third list contains questions in the same order as the first list. The third list sounds like this:

Third List

Forty-one	What kind barricades?	(translation space)	What kind barricades?
Forty-two	What kind mine fields?	(translation space)	What kind mine fields?

The fourth list is like the third list, but the questions are in a different order. The fourth list sounds like this:

Fourth List

Forty-one	What kind mine fields?	(translation space)	What kind mine fields?
Forty-two	Where positions?	(translation space)	Where positions?
Forty-three	How far radio station from us?	(translation space)	How far radio station from us?
Forty-four	What kind anti-gas masks?	(translation space)	What kind anti-gas masks?

On the fifth list the questions are in no particular order. When you get five lists in a row all correct you are ready for the next lesson.

Anti-gas mask: The Russians say anti-gas mask rather than gas mask as we do.

Score Sheet

A

First List				Second List				Third List				Fourth List				Fifth List			
	C	P	X		C	P	X		C	P	X		C	P	X		C	P	X
41	0	0	0	41	0	0	0	41	0	0	0	41	0	0	0	41	0	0	0
42	0	0	0	42	0	0	0	42	0	0	0	42	0	0	0	42	0	0	0
43	0	0	0	43	0	0	0	43	0	0	0	43	0	0	0	43	0	0	0
44	0	0	0	44	0	0	0	44	0	0	0	44	0	0	0	44	0	0	0
45	0	0	0	45	0	0	0	45	0	0	0	45	0	0	0	45	0	0	0
46	0	0	0	46	0	0	0	46	0	0	0	46	0	0	0	46	0	0	0
47	0	0	0	47	0	0	0	47	0	0	0	47	0	0	0	47	0	0	0
48	0	0	0	48	0	0	0	48	0	0	0	48	0	0	0	48	0	0	0
49	0	0	0	49	0	0	0	49	0	0	0	49	0	0	0	49	0	0	0

B

First List				Second List				Third List				Fourth List				Fifth List			
	C	P	X		C	P	X		C	P	X		C	P	X		C	P	X
41	0	0	0	41	0	0	0	41	0	0	0	41	0	0	0	41	0	0	0
42	0	0	0	42	0	0	0	42	0	0	0	42	0	0	0	42	0	0	0
43	0	0	0	43	0	0	0	43	0	0	0	43	0	0	0	43	0	0	0
44	0	0	0	44	0	0	0	44	0	0	0	44	0	0	0	44	0	0	0
45	0	0	0	45	0	0	0	45	0	0	0	45	0	0	0	45	0	0	0
46	0	0	0	46	0	0	0	46	0	0	0	46	0	0	0	46	0	0	0
47	0	0	0	47	0	0	0	47	0	0	0	47	0	0	0	47	0	0	0
48	0	0	0	48	0	0	0	48	0	0	0	48	0	0	0	48	0	0	0
49	0	0	0	49	0	0	0	49	0	0	0	49	0	0	0	49	0	0	0

C

First List				Second List				Third List				Fourth List				Fifth List			
	C	P	X		C	P	X		C	P	X		C	P	X		C	P	X
41	0	0	0	41	0	0	0	41	0	0	0	41	0	0	0	41	0	0	0
42	0	0	0	42	0	0	0	42	0	0	0	42	0	0	0	42	0	0	0
43	0	0	0	43	0	0	0	43	0	0	0	43	0	0	0	43	0	0	0
44	0	0	0	44	0	0	0	44	0	0	0	44	0	0	0	44	0	0	0
45	0	0	0	45	0	0	0	45	0	0	0	45	0	0	0	45	0	0	0
46	0	0	0	46	0	0	0	46	0	0	0	46	0	0	0	46	0	0	0
47	0	0	0	47	0	0	0	47	0	0	0	47	0	0	0	47	0	0	0
48	0	0	0	48	0	0	0	48	0	0	0	48	0	0	0	48	0	0	0
49	0	0	0	49	0	0	0	49	0	0	0	49	0	0	0	49	0	0	0

D

First List				Second List				Third List				Fourth List				Fifth List			
	C	P	X		C	P	X		C	P	X		C	P	X		C	P	X
41	0	0	0	41	0	0	0	41	0	0	0	41	0	0	0	41	0	0	0
42	0	0	0	42	0	0	0	42	0	0	0	42	0	0	0	42	0	0	0
43	0	0	0	43	0	0	0	43	0	0	0	43	0	0	0	43	0	0	0
44	0	0	0	44	0	0	0	44	0	0	0	44	0	0	0	44	0	0	0
45	0	0	0	45	0	0	0	45	0	0	0	45	0	0	0	45	0	0	0
46	0	0	0	46	0	0	0	46	0	0	0	46	0	0	0	46	0	0	0
47	0	0	0	47	0	0	0	47	0	0	0	47	0	0	0	47	0	0	0
48	0	0	0	48	0	0	0	48	0	0	0	48	0	0	0	48	0	0	0
49	0	0	0	49	0	0	0	49	0	0	0	49	0	0	0	49	0	0	0

E

First List				Second List				Third List				Fourth List				Fifth List			
	C	P	X		C	P	X		C	P	X		C	P	X		C	P	X
41	0	0	0	41	0	0	0	41	0	0	0	41	0	0	0	41	0	0	0
42	0	0	0	42	0	0	0	42	0	0	0	42	0	0	0	42	0	0	0
43	0	0	0	43	0	0	0	43	0	0	0	43	0	0	0	43	0	0	0
44	0	0	0	44	0	0	0	44	0	0	0	44	0	0	0	44	0	0	0
45	0	0	0	45	0	0	0	45	0	0	0	45	0	0	0	45	0	0	0
46	0	0	0	46	0	0	0	46	0	0	0	46	0	0	0	46	0	0	0
47	0	0	0	47	0	0	0	47	0	0	0	47	0	0	0	47	0	0	0
48	0	0	0	48	0	0	0	48	0	0	0	48	0	0	0	48	0	0	0
49	0	0	0	49	0	0	0	49	0	0	0	49	0	0	0	49	0	0	0

Lesson #14—Section B

You are now ready to start learning to speak Russian. In this lesson you will learn to say five questions in Russian. To make things easier for you, this lesson has the five shortest questions and uses none of the separate words. All your answers will be in Russian.

The beginning of the tape sounds like this: (words underlined are said in Russian and since all your answers will be in Russian, the spaces are also underlined):

Lesson Number Fourteen

First List

One	Your	(Imitation Space)	Your	(Imitation Space)	Your	(Translation Space)	Your
Two	You	(Imitation Space)	You	(Imitation Space)	You	(Translation Space)	You

and so on for five items.

The second list sounds like this:

Second List

One	Who	(Imitation Space)	Who	(Translation Space)	Who
Two	You	(Imitation Space)	You	(Translation Space)	You

and so on for five items.

On the third list each item is doubled, that is, the even-numbered items are exact repeats of the item that just came before it. The third list sounds like this:

Third List

One	What kind?	(Translation Space)	What kind?
Two	What kind?	(Translation Space)	What kind?
Three	Your	(Translation Space)	Your
Four	Your	(Translation Space)	Your

and so on for ten items.

The fourth list is just like the third except that the questions are in a different order. The even numbered items are still exact repetitions of the item before.

The fifth list has five items, and uses the same kind of item as the third and fourth lists, but there is no doubling.

Remember that you are not to score the items as you are recording your answers. First you go through all five lists. When you get to the end of the fifth list switch the machine to "Playback." Now the machine won't erase. Listen carefully to each item and score each item after you hear the correct Russian pronunciation. You should always score your translation that follows the English. Score V (Very Good), P (Pretty Good), or X (Not So Good).

Many people find some of the Russian words very hard to pronounce perfectly. This is natural since you have never had some of these sounds before. But usually with close listening and careful practice everyone can score himself V (Very Good) after a while. To get the most out of the time spent, many students repeat the Russian every time they hear it, including the numbers.

You are finished with the lesson when you have correctly translated the English into Russian on five lists in a row. A list is correctly translated when you have scored all of your translations as Very Good or when you have scored some of your translations as Very Good and the rest as Pretty Good. Lessons with translations scored Not So Good are not acceptable.

Score Sheet

A

First List				Second List				Third List				Fourth List				Fifth List			
	V	P	X		V	P	X		V	P	X		V	P	X		V	P	X
1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0
2	0	0	0	2	0	0	0	2	0	0	0	2	0	0	0	2	0	0	0
3	0	0	0	3	0	0	0	3	0	0	0	3	0	0	0	3	0	0	0
4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
5	0	0	0	5	0	0	0	5	0	0	0	5	0	0	0	5	0	0	0
								6	0	0	0	6	0	0	0				
								7	0	0	0	7	0	0	0				
								8	0	0	0	8	0	0	0				
								9	0	0	0	9	0	0	0				
								10	0	0	0	10	0	0	0				

B

First List				Second List				Third List				Fourth List				Fifth List			
	V	P	X		V	P	X		V	P	X		V	P	X		V	P	X
1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0
2	0	0	0	2	0	0	0	2	0	0	0	2	0	0	0	2	0	0	0
3	0	0	0	3	0	0	0	3	0	0	0	3	0	0	0	3	0	0	0
4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
5	0	0	0	5	0	0	0	5	0	0	0	5	0	0	0	5	0	0	0
								6	0	0	0	6	0	0	0				
								7	0	0	0	7	0	0	0				
								8	0	0	0	8	0	0	0				
								9	0	0	0	9	0	0	0				
								10	0	0	0	10	0	0	0				

C

First List				Second List				Third List				Fourth List				Fifth List			
	V	P	X		V	P	X		V	P	X		V	P	X		V	P	X
1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0
2	0	0	0	2	0	0	0	2	0	0	0	2	0	0	0	2	0	0	0
3	0	0	0	3	0	0	0	3	0	0	0	3	0	0	0	3	0	0	0
4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
5	0	0	0	5	0	0	0	5	0	0	0	5	0	0	0	5	0	0	0
								6	0	0	0	6	0	0	0				
								7	0	0	0	7	0	0	0				
								8	0	0	0	8	0	0	0				
								9	0	0	0	9	0	0	0				
								10	0	0	0	10	0	0	0				

D

First List				Second List				Third List				Fourth List				Fifth List			
	V	P	X		V	P	X		V	P	X		V	P	X		V	P	X
1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0
2	0	0	0	2	0	0	0	2	0	0	0	2	0	0	0	2	0	0	0
3	0	0	0	3	0	0	0	3	0	0	0	3	0	0	0	3	0	0	0
4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
5	0	0	0	5	0	0	0	5	0	0	0	5	0	0	0	5	0	0	0
								6	0	0	0	6	0	0	0				
								7	0	0	0	7	0	0	0				
								8	0	0	0	8	0	0	0				
								9	0	0	0	9	0	0	0				
								10	0	0	0	10	0	0	0				

E

First List				Second List				Third List				Fourth List				Fifth List			
	V	P	X		V	P	X		V	P	X		V	P	X		V	P	X
1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0
2	0	0	0	2	0	0	0	2	0	0	0	2	0	0	0	2	0	0	0
3	0	0	0	3	0	0	0	3	0	0	0	3	0	0	0	3	0	0	0
4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
5	0	0	0	5	0	0	0	5	0	0	0	5	0	0	0	5	0	0	0
								6	0	0	0	6	0	0	0				
								7	0	0	0	7	0	0	0				
								8	0	0	0	8	0	0	0				
								9	0	0	0	9	0	0	0				
								10	0	0	0	10	0	0	0				

Lesson #32—Section C

In this lesson you will practice speaking the questions and learn to understand some Russian answers to those questions. Here is what you do:

a. Whenever you hear a question in Russian (first list) or in English (fifth list) you are to ask that question in Russian.

b. Whenever you hear a word or phrase in Russian (second, third, and fourth lists) you are to translate that word or phrase into English. (On the second list the new words are given first in English.)

c. Whenever you hear an answer given twice in Russian (all lists) you are to translate it into English.

Score yourself at the end of each item. If some translations in an item are correct and some are wrong, score yourself "P" (Part Correct). Score yourself "C" (Correct) only if you get all the translations exactly as given by the tape. On the first and fifth lists a "C" score indicates a "good" Russian pronunciation. The lesson is outlined below. All other lessons in this section are made up in the same way.

LIST	QUESTIONS				NEW WORDS OR PHRASES*			ANSWERS			
First:	Number	Question	Imitation Space					Answer	Correct Trans.	Answer	Trans. Space
Second:	Number				Word or phrase	Word or phrase	Trans. Space	Answer	Answer	Trans. Space	Correct Trans.
Third:	Number				Word or phrase	Trans. Space	Correct Trans.	Answer	Answer	Trans. Space	Correct Trans.
Fourth:	Number				Word or phrase	Trans. Space	Correct Trans.	Answer	Answer	Trans. Space	Correct Trans.
Fifth:	Number	Question	Trans. Space	Correct Trans.				Answer	Answer	Trans. Space	Correct Trans.

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*New words used in this lesson.

yes	terrain
is	here
gun	mined
also	oil
howitzer	tires

Special Programing Note for this Sample

1. In each list pairs of answers are identical.
2. Answers in the first and second list are identical.
3. Answers in the third, fourth, and fifth lists have words or phrases interchanged, substituted, and/or combined to form different answers using *only* the material given in the original (first and second list) answers.

Score Sheet

A

First List				Second List				Third List				Fourth List				Fifth List			
	C	P	X		C	P	X		C	P	X		C	P	X		C	P	X
1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0
2	0	0	0	2	0	0	0	2	0	0	0	2	0	0	0	2	0	0	0
3	0	0	0	3	0	0	0	3	0	0	0	3	0	0	0	3	0	0	0
4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0

B

First List				Second List				Third List				Fourth List				Fifth List			
	C	P	X		C	P	X		C	P	X		C	P	X		C	P	X
1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0
2	0	0	0	2	0	0	0	2	0	0	0	2	0	0	0	2	0	0	0
3	0	0	0	3	0	0	0	3	0	0	0	3	0	0	0	3	0	0	0
4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0

C

First List				Second List				Third List				Fourth List				Fifth List			
	C	P	X		C	P	X		C	P	X		C	P	X		C	P	X
1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0
2	0	0	0	2	0	0	0	2	0	0	0	2	0	0	0	2	0	0	0
3	0	0	0	3	0	0	0	3	0	0	0	3	0	0	0	3	0	0	0
4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0

D

First List				Second List				Third List				Fourth List				Fifth List			
	C	P	X		C	P	X		C	P	X		C	P	X		C	P	X
1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0
2	0	0	0	2	0	0	0	2	0	0	0	2	0	0	0	2	0	0	0
3	0	0	0	3	0	0	0	3	0	0	0	3	0	0	0	3	0	0	0
4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0

E

First List				Second List				Third List				Fourth List				Fifth List			
	C	P	X		C	P	X		C	P	X		C	P	X		C	P	X
1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0
2	0	0	0	2	0	0	0	2	0	0	0	2	0	0	0	2	0	0	0
3	0	0	0	3	0	0	0	3	0	0	0	3	0	0	0	3	0	0	0
4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0

F

First List				Second List				Third List				Fourth List				Fifth List			
	C	P	X		C	P	X		C	P	X		C	P	X		C	P	X
1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0
2	0	0	0	2	0	0	0	2	0	0	0	2	0	0	0	2	0	0	0
3	0	0	0	3	0	0	0	3	0	0	0	3	0	0	0	3	0	0	0
4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0

Appendix E

GENERAL DIRECTIONS TO STUDENT

Limited Russian Language Course for the Front-Line Questioner

This short language course will teach you to speak and understand enough Russian so that you will be able to question prisoners in order to get military information. Newly captured prisoners usually have military information, such as the number of men facing you and where their guns are located. They may be willing to tell you these things. But if you cannot speak and understand even a little of their language all of this valuable information will be lost. In this course you will learn enough Russian so that this kind of information can be put to use in carrying out your mission. It may even help save your life or the lives of your buddies.

This language course is different from any other course you may have taken. There will be no person to act as a teacher, no text books, and no written assignments. There will be no grammar to learn, no reading, writing, or spelling.

You will do only two things—listen and talk. You will learn to understand and speak a specially selected set of Russian commands and questions and to understand some of the most probable Russian answers to these questions.

In this course you will work on the lessons at your own speed. No other student can hold you back and there is no teacher to make you work faster than you like. You can go over each lesson as many times as you need until you are satisfied you have learned the material in the lesson.

Every lesson in the course is recorded on tape. You will get a tape recorder, a microphone, and a set of earphones. A combined direction and score sheet comes with each lesson. You will get a clipboard to hold this score sheet and a punch for scoring your answers.

The course is divided into three sections. In Section A you will hear commands and questions in Russian and learn to give their English translations. In Section B you will learn to give commands and ask questions in Russian. In Section C you will hear some of the most probable Russian answers to the questions and learn to give their English translations.

The sections are divided into lessons. These lessons are made up of 5 lists with the first list giving all the material used in the lesson. The other four lists are different arrangements of the same material.

Every list is made up of items, that is words, phrases, or short sentences and their translations. Each item also has some blank space for your translation or answer. This blank space is called a translation space.

In general, here is the way a lesson is set up. In the first list you hear the correct translations and get a chance to practice them. On the other four lists your job is to remember the translations you have heard and practiced and try to give them before the tape does. You do not have too much time, however, because after a short pause the tape will give the correct translation.

There are two reasons for having the tape give the correct translations after you give your translation. One, it lets you know at once if you gave the right translation. Two, if you do not remember what to say or say the wrong thing, the translations given by the tape will help you get that item correct when it comes up again in the next list.

No one can get all the answers correct the first time through the tape, so when you go over the tape again the machine erases your old answers or translations and records your new ones. You can repeat a lesson as many times as you like and only the translations you give during the last repetition will remain on the tape.

You have finished a lesson when for all five lists, all the right translations are recorded in the right places. You can make more than one translation in any translation space if you want to correct yourself or just practice. However, in order to get an item correct all you need is one correct translation in the translation space.

After the first day, before you start on your lessons you will get a Review-Preview tape that you will go over just once, without scoring. This tape is given to you for three reasons:

1. It gives you a short warm-up just like a baseball pitcher takes before he starts to pitch.
2. The review part helps you remember what you learned the day before.
3. The preview part gives you an idea of what you are going to learn.

After you have finished each section of the course, you will be tested on that section. When you have completed the course and pass all the section tests you will be given two final tests. The first will be on tape. You will hear the English for the commands and questions and you will translate them into Russian. You will then hear the Russian answers to your questions and you will translate these answers into English.

The second test will be a live one. A native Russian will act as a prisoner of war. You will ask him some of the questions you have learned and you will translate his answers. Your score will depend on the number of items of information you can get from the Russian.

Appendix F

SAMPLES OF SECTION INTRODUCTIONS AND STUDY GUIDES

Introduction - Section B

In this section you will learn to say the commands and questions in Russian. All of your answers in this section will be in Russian. Every time you hear any Russian repeat it, imitating it as closely as you can. Every time you hear any English translate it into Russian. As in Section A, all lessons, lists, and items are numbered on the tape in Russian.

Section B is divided into 17 lessons. Lessons #14 and #15 each contain five of the questions, without the separate words so that learning to speak the questions will be as easy as possible. Lessons #16 to #26 give the questions, and all of the separate words. The last four lessons present the commands.

Three kinds of items are used in Section B. In the first kind you will hear after the number of the item in Russian, (a) a word, or command, or question in Russian; and (b) an imitation space in which you imitate or pronounce the Russian. A and b are then repeated; (a) the Russian is given for the second time, and (b) there is a second imitation space for you to pronounce the Russian. Then comes (c) the English, (d) a translation space in which you give the Russian, and (e) the correct Russian once more.

The second kind of item is the same except that in the beginning of each item only one Russian and one imitation space is given rather than two.

In the third kind you will hear after the Russian item number (a) a word or command or question in English, (b) a space in which you translate this English into Russian, and (c) the correct Russian translation.

The scoring procedure is different in this section. You will give few wrong words. Mainly you will be scoring how well you pronounce the Russian. Consider the three circles for scoring each item as V (Very Good), P (Pretty Good), and X (Not So Good). If you actually give a wrong answer or don't answer, don't score that item. Because scoring involves a careful comparison of your pronunciation with the tape pronunciation, it is better not to score right after each translation as you did in Section A. Instead, wait until you've given answers for the whole tape, all five lists, then switch the control knob to "Playback" and go through the five lists again. This time instead of recording answers, listen and carefully compare your pronunciation with the tape pronunciation for each item. Then score yourself at the end of each item. For those items on which you give more than one answer, score only the last, the translation following the English.

In scoring, be honest with yourself. Since there is nobody else to check whether the pronunciation is really "very good," some people may be tempted to give themselves this score when they don't really deserve it. Such people are only fooling themselves, since they will find later that their Russian is not understandable and they will probably either fail the course or have to take Section B over again. But if you listen carefully and score yourself according to your best judgment, you won't have any trouble.

One of the main difficulties in learning to speak a foreign language is that the words are not just different arrangements of the same sounds used in English words. There are many sounds which are actually different. But they are not wildly different sounds. They may sound a lot like some English sounds. You must be careful not to mistake a slightly different sound for an English sound. This is one of the reasons why speaking and scoring are done at different times, so you'll be able to listen and compare very carefully. When you are speaking, make sure you try to say the sounds exactly the way the tape does. This means copying the pitch, loudness, stress, etc. as well as the sound of the Russian words. You won't be able to make some of these sounds at first, but this is not because Americans have a different kind of mouth or throat than Russians. It is just because you haven't had enough practice in making these different sounds. You will have to do some experimenting. Move your tongue and lips into new and different positions. Practice saying the words that you hear on the tape with your tongue touching your teeth or between your teeth or touching your upper gums. Only by trying different ways of making sounds will you be able to match the words on the tapes. Another important thing is to always speak up clearly. Put some energy into it; don't be afraid to make mistakes. Nobody can hear you and you can erase the tape. Say the Russian as if you were actually giving the command or asking the question.

You should continue to compare carefully your pronunciation with the tape even though you feel pretty sure that your pronunciation is "very good." There are several reasons for this. You may slowly drift back into English pronunciation habits without realizing it. Then you will be practicing the incorrect Russian pronunciation which will make your Russian hard or impossible to understand. Even though you think your pronunciation of a word or sentence is almost perfect, you may notice some small but important difference later on when you get better at listening and speaking Russian.

In this section take every chance to imitate any Russian that you hear. You will notice that after the end of each item there is a little time in which you can repeat or imitate the correct Russian answer that is given on the tape. Use this extra chance to get a little more speaking practice.

Study Guide - Section B

1. Speak loud and clear—almost shout if you want. Research shows that you learn to pronounce better and quicker if you speak loud and clear.

2. First, use every chance you have to imitate the Russian. Imitate the numbers and the heading of the lessons and the lists. Second, take advantage of the space at the end of each item to slip in an extra imitation of the Russian.

3. If you don't know or remember the whole question, give any part of it that you can, especially the question frame. (Few if any people can immediately give the 7th letter of the alphabet if asked, but almost every adult can recite the first 6 letters and then give the 7th.) Sometimes if you give the first part of the answer the rest will come to you.

4. At first don't try for a perfect pronunciation. Concentrate on remembering the Russian and say what you remember even if it's not quite correct. You can then polish up your pronunciation, especially after you replay the lesson and compare your pronunciation with the pronunciation on the tape.

5. Break up long words into syllables. Imitate the first part of the word and on the next time through the tape add the other part. This means that sometimes you will only be able to give the first one or two sounds of a Russian word. But with practice you will be able to add the other parts and get the whole word correct.

6. When you imitate or say the Russian, try to talk in a military manner—give commands and ask questions as if you were really questioning a prisoner-of-war. Because after you finish the course you will have a chance to question a Russian in order to get combat information. You will find that he will understand your questions and commands better if you talk in a military manner.

7. Be careful when you pronounce Russian words that sound a good deal like the same English words. For example, the words "battalion," "deserter," "rockets," and "barricades" are very much alike in Russian and English, but if you use the English pronunciation, it may not correctly be understood by the Russian you will talk with.

8. Since nobody can hear you when you are learning to pronounce the Russian, you can try different ways of using your lips and tongue without feeling that it sounds funny. A good trick is to exaggerate your mouth movements and to make sounds that will help you to get the right pronunciation. For example, the "r" in the Russian word "artillery" is said like the sound boys make when they are imitating machine-gun fire or the sound of an air-drill.

9. Pay special attention to the second list of the lesson where you pronounce only the inserts. After you finish Section B you will be tested on these inserts.

10. Commands which will be very useful to you in questioning Russian personnel are those that deal with the interrogation procedure, such as "repeat answer," "write all ciphers," "speak slowly."

11. Some students work on a lesson until they are satisfied with their pronunciation. Other students go over a lesson until they can remember and pronounce the Russian words in a rough fashion. They do the same with the next lesson and then return to the first lesson to polish up their pronunciation. Use whatever method works best for you.

Appendix G

FRONT-LINE QUESTIONING GUIDE
(Interrogation Techniques)

The goal of the front-line questioner is to get tactical information. This can best be done by guiding or forcing your POW to give short answers that you can understand.

Here are some of the techniques you can use to force your POW to give short, understandable answers.

1. Use the commands you have learned, "GIVE ME SHORT AND CLEAR ANSWER," "STOP-SILENCE," "REPEAT ANSWER," "SPEAK SLOWLY," "WRITE ALL CIPHERS," to get short, understandable answers.

2. You will always start your questioning with "YOUR NAME," "YOUR RANK," "YOUR SERIAL NUMBER," "YOUR AGE," etc. The answers to these questions should be short and direct. You know about what to expect for an answer: a proper name, a military rank, a set of numbers, a number ranging from about 18 to 80, the exact number depending on the person you are looking at. Now if your POW gives you short direct answers to your questions, reward him or show your approval by saying "GOOD," in Russian after every short answer. If he gives a long-winded answer, part of which you cannot understand, "STOP or SILENCE" him, tell him to "GIVE ME SHORT ANSWER" and then ask the question again. The main idea is to get your POW in the habit or groove of giving short answers from the beginning of your interview.

3. Another way to force a short answer from a long-winded POW is to tell him to "REPEAT ANSWER" a couple of times and then ask the same question. He may get tired of saying all the extra material and may give a short direct answer. In case you forget how to say "REPEAT ANSWER" you can get the same result by just asking the same question over again. If you get a short answer, reward him by saying "GOOD" in Russian. Try to establish the short answer pattern in the behavior of the POW.

4. Remember that what you want is a short direct answer to your specific question. The questions are designed to get short answers. If you ask the question, "HAVE YOU THERE TANKS?" and the POW answers "Yes, 20 or 40, perhaps two tank platoons 10 kilometers from here," "STOP or SILENCE" your POW. Even if you understand the complete answer, "STOP" your POW and make him give you a short direct answer which in this case would be just one word, "Yes." You then have other questions, "HOW MANY" and "HOW FAR FROM US" which will get you the desired information given in the size answer you want.

If you accept a long-winded answer to a simple direct question you are letting the POW set the pattern of the interview and as the questioning proceeds it will become harder and harder to get short understandable answers from your POW.

5. Since you have just captured this POW in combat and the information he has may help you carry out your mission or even save your life, don't be afraid to threaten him either with the command, "SHORT ANSWER OR I SHOOT" or with your rifle in order to get necessary information.

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